

# W5YI

National Volunteer Examiner Coordinator

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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Vol. 10, Issue # 16

\$1.50

PUBLISHED TWICE A MONTH

August 15, 1988

## 220-222 MHz Allocated to Land Mobile!

"...the public interest would be best served by providing dedicated spectrum for the development of narrow-band spectrum efficient land mobile technologies, if such technologies are to have a reasonable opportunity for acceptance in the market place." **[FCC Commissioners, 8/4/88]**

"I take some solace in the fact that the amateur community has been on notice for quite some time of the possibility of the reallocation of this [220-222 MHz] spectrum." **[FCC Chairman Dennis Patrick]**

"It appears that there is ample space to reaccomodate current users of the 220-225 MHz segment in the 222-225 MHz segment. Further, numerous other amateur bands are available, and the loss of the 2 MHz represents less than a 2% reduction in amateur spectrum." **[Julius Knapp, FCC Chief Frequency Allocations Branch]**

"We still feel that the band is lightly used, and that the current uses of that band can be accomodated in the 3 MHz above 222." **[Tom Stanley, FCC Chief Engineer.]**

"We're shocked and disappointed at the Commission's action. ...We've lost the battle, but not the war. The League will continue to pursue every available administrative, judicial, and legislative remedy to ensure that radio amateurs have access to the spectrum then need to serve the public." **[ARRL President Larry Price, W4RA]**

### BACKGROUND:

The fight to save all five megahertz of the amateur 220 MHz band has really been going on for nearly ten years now. The issue came to a head, however, when the FCC proposed reallocating the top two megahertz (220-222) of the 220-225 MHz amateur band to business use on February 2, 1987. Prior to the 1979 World Administrative Radio Conference, the 220-225 MHz band was primarily allocated to the government Radiolocation Service, ...amateurs were allowed access to the band on a secondary basis.

WARC-79 provided for the phasing out of radiolocation operation in this band and 220-225 MHz became a prime candidate for reallocation.

The FCC and NTIA (which gets involved in government frequency matters) said that they would allow the amateur service to use the 220-225 MHz band on a *temporary* basis until a decision could be made regarding permanent allocations.

The handwriting was on the wall when a joint FCC/NTIA planning group recommended that a portion of the 216-225 MHz band be designated for narrowband land mobile operations on a shared basis between government and nongovernment users.

The FCC received three petitions from industry requesting that these recommendations be implemented. Aided by skilled professional legislative lobbyists, the ARRL mounted a fierce campaign to retain the band for amateur use.



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## FCC REALLOCATES THE 220-MHz BAND

We were at the Thursday morning (August 4th) Commissioners meeting when the FCC ruled on the permanent frequency allocation of the 220-MHz VHF band. While the Amateur Service is naturally primarily concerned with the 220-225 MHz portion to which they have had long temporary access, the portion of the spectrum ruled on by the FCC extended from 216 to 225 MHz.

The bottom line is that the FCC followed through *without deviation* on their original proposal (NPRM, General Docket No. 87-14, February 2, 1987) and divided up the band three ways. The Commission:

- (1.) maintained the Maritime Mobile allocation in the 216-220 MHz band;
- (2.) allocated the 220-222 MHz band to the Private Land Mobile Service; and
- (3.) allocated the 222-225 MHz band to the Amateur Radio Service for exclusive use.

## THE AUGUST 4TH FCC MEETING....

The matter was presented to the Commissioners by **Julius Knapp**, Chief of the *Frequency Allocations Branch* of the FCC's Office of Engineering and Technology. The following is the text of Knapp's presentation to the FCC....

"Good morning, Mr. Chairman and Commissioners. The item before you is a *Report and Order* bringing to resolution a very difficult and long standing allocation issue in the 220-225 MHz band. The 1979 WARC allocated this band internationally to Fixed, Mobile, Radiolocation and Amateur Services on a co-primary basis. The Radiolocation Service will become secondary on January 1, 1990, and no new stations may be authorized. The 220-225 MHz band had previously been allocated in the United States to the federal government on a primary basis for radiolocation and to the amateur service on a secondary basis.

"In 1984, the Commission conformed the United States allocation of this band to the international allocation. However, implementation of the fixed and mobile services was deferred until a further proceeding could be initiated to determine precisely how the band would be shared among the various services and between federal government and public users.

"The proposal in this proceeding was initiated to resolve these sharing issues. The proposal intended to balance a variety of factors. The Commission had received petitions seeking to implement narrowband land mobile systems in this region of the spectrum. Petitioners argued that existing provisions for narrowband land mobile systems are severely restricted due to the need to protect against interference to existing systems.

The petitioners maintained that a dedicated band of frequencies was necessary for this technology to have a reasonable opportunity to gain acceptance in the marketplace.

"The National Telecommunications and Information Administration (NTIA) also stated that the federal government had requirements for narrowband land mobile systems in this band. At the same time, the Commission was concerned about minimizing the impact on amateurs. The proposal noted that amateur use of this band is considerably lower than other amateur bands, and that most such use was congregated above 222 MHz. Taking these factors into account, the Commission proposed to allocate the 220-222 MHz band for narrowband land mobile service, and the 222-225 [portion] exclusively to the amateur service. No allocation was proposed for the fixed service, because existing allocations elsewhere in the spectrum appeared adequate.

"In general, the land mobile community supported the proposal. For example, UPS [United Parcel System] indicated that it will seek to develop a state of the art [package] delivery system using narrowband equipment in the 220 MHz band. The land mobile community generally agreed that dedicated spectrum is required initially for this technology. On the other hand, amateurs strongly opposed the proposal. They raised a number of concerns including the impact on existing users, the impact on emergency communications, and the need to provide for future growth of the amateur service.

"Upon careful review of all of the information that has been submitted, the staff believes that the proposed allocations are in the public interest. It appears that there is ample space to reaccommodate current users of the 220-225 MHz segment in the 222-225 MHz segment. Further, numerous other amateur bands are available, and the loss of the 2 MHz represents less than a 2% reduction in amateur spectrum.

"With regard to emergency communications,

"I am a currently licensed Extra Class amateur radio operator and wish to be a volunteer examiner. I have never had my station or

WOULD YOU LIKE TO BECOME A VOLUNTEER EXAMINER?  
The "W5YI Report" Program? If so please send a copy of  
your Extra Class license, the following signed statement, and



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several hundred channels will remain available in the most useful parts of the spectrum. This should meet the local area communication requirements of any emergency or natural disaster. The item seeks to assure the amateur community that the Commission continues to strongly support the amateur service. Amateurs have a long and outstanding record of service to the public, and have on countless occasions, provided communications in emergencies.

"We are hopeful that by adopting an exclusive, private allocation of 3 MHz for the amateur service, we will remove the cloud that has hung over this band for many years. This should lead to increased use of the band by amateurs. This proceeding addresses only the allocation of the spectrum. Subsequent proceedings will address the necessary service rules for the new land mobile allocation, and modifications to the amateur rules. In light of these considerations, the staff recommends adoption of this *Report and Order*." [End quote]

**FCC Commissioner James Quello:** "It's a tough item. I've been a long time supporter of the amateur service. We recognize that they have an outstanding record. It's a well-disciplined service, and I hope that they have enough spectrum. I hope that we are allocating spectrum to a service and not to a technology. Do you have any comments on that?"

**FCC Chief Engineer Tom Stanley:** "The 220-220 MHz band is being allocated to the Private Land Mobile Radio Services in Part 90. Narrowband technology is to be applied, but the allocation is to a service and not to a technology."

**FCC Chairman Dennis Patrick:** "I agree with Commissioner Quello that this is a tough item, a difficult decision in many ways. We've studied the various arguments and concerns that were expressed on both sides of the question for quite a number of months. I take some solace in the fact that the amateur community has been on notice for quite some time of the possibility of the reallocation of this spectrum. The amateur community will now have exclusive use of the 3 MHz here that is being divided, and this represents less than 2% of the spectrum available to amateurs.

"All that being said, it's still a tough decision, ...as spectrum allocation decisions always are. The amateurs continue to provide very valuable services to the American people in emergency situations,

and with respect to training radio operators. But we also have continuing critical and pressing needs in the land mobile area, and we want to promote spectral efficiency. We make some strides forward in that regard in this decision. So, all in all, I'm confident that this is the correct decision, ...though not an easy decision."

## AFTER MEETING PRESS CONFERENCE...

A press conference was held after the Commissioner's meeting and a press release issued. The Commission said a variety of factors were considered in making the allocations, including the need to provide for narrowband land mobile operations, the impact on amateur use of the 220-225 MHz band, and the potential interference to TV broadcasting, ...as well as the actions taken in the 1979 *World Administrative Radio Conference* (WARC). It was also pointed out that as a result of the 1979 WARC, amateurs received several new frequency allocations.

The FCC said they felt "the public interest would be best served by providing dedicated spectrum for the development of narrowband spectrum efficient land mobile technologies, if such technologies are to have a reasonable opportunity for acceptance in the market place. As compared to conventional land mobile technology, narrowband technology may provide a three to four-fold increase in the number of channels that can be made available in the given amount of spectrum." The Commission noted that "promoting narrowband technology for the land mobile service is consistent with the directive of the Communications Act to encourage the provision of new technologies and services to the public.

In considering an allocation for narrowband land mobile service in the 220-MHz region, the Commission noted two constraints that precluded operation in the 216-220 MHz band. "The first constraint is that land mobile operation in the 216-220 MHz band would be impractical due to the need to provide adequate protection to TV channel 13 broadcast operation located in adjacent spectrum at 210-216 MHz. The second is the Commission's decision not to restrain the development of Automated Maritime Telecommunications Systems (AMTS) being developed in the Maritime Mobile Service in the 216-220 MHz band. Consequently, after careful consideration of a variety of alternatives, the Commission found that reallocation of this band to the

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Land Mobile Service to be shared by government and non-government users is supported by the NTIA.

With respect to amateurs, the Commission believes that, "they will benefit from an exclusive allocation of the 222-225 MHz band." The Commission noted that "several other frequency bands are available for amateur service. In particular, amateur bands at 28-29.7 MHz, 50-54 MHz, 144-148 MHz, 222-225 MHz, 420-450 MHz, 902-928 MHz and 1240-1300 MHz support amateur operations similar to the 220-222 MHz band."

"Several hundred channels will remain available for amateurs to use for emergency communications, which should meet the local area communication requirements of any emergency or natural disaster." Taking these factors, along with others into consideration, the Commission found reallocation of the 220-222 MHz band to be in the public interest.

The Commission reiterated its continued support for the amateur service. The FCC said it recognizes that "amateurs have a long history of public service and of providing assistance in emergencies, including national and international disasters. Further, amateurs are a vital resource of persons knowledgeable in the radio art and have had a long history of contributions to the advancement of radio science. The three megahertz allocated to amateurs on an exclusive basis in this proceeding, together with the many other amateur bands, should continue to provide adequately for this service."

The FCC said that amateur use of the 220-225 MHz band could continue pending "a new proceeding [that] would be initiated to develop procedural and technical rules for licensing Private Land Mobile operations in the 220-222 MHz band."

"However, since the 220-222 MHz band is to be shared between government and non-government users, the development of coordination procedures is needed," the Commission stated. "Consequently, neither government nor non-government users will be allowed access to the 220-225 MHz band until the Commission has adopted final service rules.

No effective date for amateur operation to end in the 220-222 MHz segment has been decided on, but January 1, 1990, appears logical since it was the date mentioned in the NPRM. "Amateurs are

advised to begin an orderly transition of on-going operations in the 220-222 MHz band to other amateur service frequency bands in order to avoid an abrupt termination of such activities."

## QUESTIONS ASKED OF: FCC CHIEF ENGINEER TOM STANLEY....

**W5YI Report:** "When Commissioner Quello asked about allocating spectrum not to a technology but to a service, what did he have in mind?"

**Stanley:** "People have asked in the past, 'Well, you're just allocating this spectrum to ACSB (amplitude compandored sideband), aren't you?' The answer is no. We are allocating to Part 90 [Land Mobile] services. ACSB is one narrowband technology but certainly not the only one."

**W5YI Report:** "The FCC appears to have considered the 220-222 portion of the band to be underutilized by amateurs. Now that all the comments have been received and the study has been done, is the Commission still sticking to its guns that it was underutilized?"

**Stanley:** "Correct. Use is a relative thing, and light use is even more relative. We still feel that the band is lightly used, and that the current users of that band can be accommodated in the 3 MHz above 222."

**W5YI Report:** In order to move control and auxiliary stations now operating in the lower part of 220 to other amateur bands, the rules would have to be changed. Will further proceedings address this issue?"

**Stanley:** "I presume that whatever is needed, more work would have to be done to identify whatever changes would be required. I don't know that the amateur rules specifically would be up for change, but I presume so."

## RESPONSE BY ARRL:

The American Radio Relay League, who had led the fight to keep the 220-225 MHz band intact for the Amateur Radio Service was *most unhappy* with the FCC decision to reallocate 220-222 to the Private Land Mobile Service. The ARRL, who vowed to continue to fight on, issued the following press release at noon on August 4th. Apparently they anticipated the result and had it all set to go....



"In the face of overwhelming public opposition, the Federal Communications Commission today adopted its own proposal to reallocate the 220-222 MHz frequency band from the Amateur Service to private land mobile use.

"The reallocation, proposed by FCC eighteen months ago to address what it said were critical land mobile needs and a desire to promote spectrum-efficient technology, attracted strong criticism from the nation's 435,000 radio amateurs and the many public-safety and disaster-relief organizations who rely on amateurs in communications emergencies. The thoughtful protests of many thousands of citizens became a part of the official record of the proceeding. Dozens of Congressmen expressed their own opposition to the Commission, as did the Department of Defense, on its own behalf and that of the National Communications System.

"Yet it was not until *United Parcel Service* filed comments, *six months late*, that a significant user of the proposed new land-mobile band went on record as desiring the reallocation. Despite the clear testimony that the original proposal was not in the public interest, the Commission's action appears to be identical to its first proposal without reflecting any additional understanding of Amateur Service needs. In its presentation of the item for Commission consideration, the staff of the FCC *Office of Engineering and Technology* stated that the reallocation represented just 2% of the presently available amateur spectrum -- a figure that was echoed by Chairman Dennis Patrick.

"We're shocked and disappointed at the Commission's action," said **Larry Price [W4RA]**, President of the *American Radio Relay League*, the primary spokesman for Amateur Radio in the United States. "The 2% figure has no basis in fact. As we've pointed out throughout the proceeding, the 2 MHz the Commission is intent on taking away from the Amateur Service represents more than 15% of our international primary allocations between 30 and 24,000 MHz.

"FCC tried to soften the blow by saying that the remaining 3 MHz would be available to amateurs on an exclusive basis, and by expressing its continued strong support for the Amateur Service. 'It's nice that the Commissioners want to be seen as supporters of Amateur Radio, but actions speak louder than words,' observed ARRL Executive Vice President, **David Sumner [K1ZZ]**. "The notion

that existing amateur operations below 222 MHz can all be reaccommodated in the remaining 3 MHz is *fanciful, and not supported by the public record*. On the other hand, the spectrum efficiency of narrow-band land mobile technology has been seriously challenged in engineering circles and may in fact be illusory. About all that can be said for the Commission's action is that it provides a fertile field for arguments in support of reconsideration or reversal." [Action: 8/4/88, FCC Report & Order]

## 73 MAGAZINE LOSES EDITOR-IN-CHIEF

73's Editor-in Chief, **Larry Ledlow, NASE**, departed suddenly for greener pastures in mid-July after continued disputes over editorial and managerial policies. "I've had little or no support from above and nothing but hollow promises of editorial autonomy for nearly a year. It was an uphill battle that, frankly, they didn't pay me enough to fight," he said.

"I should emphasize my main problem was with the Associate Publisher, **Stu Norwood**, and not **Wayne [Green, W2NSD/1.]** I had a serious staff problem from the start, which he refused to reckon with. That, coupled with conflicts over editorial policy, some business practices I had serious reservations about, and numerous other gnawing issues proved to me there was more interest not to rock the boat than to bring 73 back from the brink."

Larry has returned to the engineering profession, "Where there's a real interest to solve problems ...I was able to make more contributions to amateur radio when it was just a hobby for me. Once again I'll be able to apply my talents and energy to help the hobby where I see fit. I won't be drained from doing battle with mega-egos and office politics." He is now a *Senior Electrical Engineer* with Sanders Associates in Nashua, New Hampshire.

## WAYNE GREEN SUBJECT OF A.P. ARTICLE

Coincidentally, while Ledlow was resigning from 73 Magazine in a huff, the *Associated Press* was circulating a lengthy article nationwide on none other than New Hampshire publisher, **Wayne Green**. Some interesting quotes from the AP article...

"Although he made Peterborough, NH - population 4,876 - a major publishing center by pioneering such successful magazines as *Digital Audio* and *Byte*, residents like to say he *also has fired half the town*."



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"Green is a founding member of *Mensa*, an organization of people who score in the top 2 percent of intelligence tests - a man of a thousand ideas and a solution to every problem. ...Life has been far from routine for Green since he left New York City 27 years ago. Two years earlier he had been fired as an editor of a ham radio magazine, so he started his own, called 73. Green has now started 25 magazines. ...He has bright ideas, but no depth to them, ...said a former employee. He hires people to implement them, and when it doesn't work, he fires them. ...At 65, he seems to make a lasting impression, positive or negative, on almost everyone he meets. ...He is generally respected even among those he has rankled as a man of considerable vision in the computer field."

## AMATEUR RADIO CALL SIGNS...

issued as of the first of August 1988.

<u>Radio District</u>	<u>Gp."A" Extra</u>	<u>Gp."B" Advan.</u>	<u>Gp."C" Tech/Gen</u>	<u>Gp."D" Novice</u>
0	WM0F	KE0XC	N0JPR	KB0DBY
1	NS1Z	KC1KP	N1FXC	KA1SLU
2	WI2S	KE2II	N2ILQ	KB2GGF
3	NR3H	KD3IR	N3GKJ	KA3TMK
4 (*)	AB4JN	KM4FI	N4TLW	KC4GKX
5 (*)	AA5HI	KG5MA	N5MXU	KB5HAJ
6 (*)	AA6JU	KJ6KK	N6SVA	KB6ZOE
7	WR7G	KF7MW	N7LMM	KB7FPZ
8	WI8Z	KE8TL	N8JTR	KB8FIR
9	WA9J	KE9LX	N9HRH	KB9BIQ
N. Mariana Is.	AH0F	AH0AE	KH0AK	WH0AAH
Guam	KH2K	AH2BZ	KH2DI	WH2ALR
Johnston Is.	AH3B	AH3AC	KH3AB	WH3AAC
Midway Island		AH4AA	KH4AD	WH4AAF
Palmyra/Jarvis	AH5A			
Hawaii	(**)	AH6JC	NH6QG	WH6BZR
Kure Island			KH7AA	
Amer. Samoa	AH8C	AH8AD	KH8AF	WH8AAH
Wake Wilkes Peale		AH9AD	KH9AG	WH9AAH
Alaska	(**)	AL7KF	NL7OM	WL7BSB
Virgin Islands	NP2C	KP2BN	NP2CR	WP2AGA
Puerto Rico	(**)	KP4PN	WP4QK	WP4IDY

**NOTE:** \* = All 2-by-1 format call signs have been assigned in the 4th, 5th and 6th radio districts. 2-by-2 format call signs from the AA-AL prefix block now being assigned to Extra Class amateurs. \*\* = All Group "A" (2-by-1) format call signs have been assigned in Hawaii, Alaska and Puerto Rico. Group "B" (2-by-2) format call signs are assigned to Extra Class when Group "A" run out.

[Source: FCC, Gettysburg, Pennsylvania]

## JUNE VE PROGRAM STATISTICS

	<u>June</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>No. VEC's</u>		*75	*59	*61
<u>Testing Sessions</u>		306	430	436
<u>VEC</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	
ARRL	50.7%	42.8%	45.4%	
W5YI	20.6	25.6	29.6	
CAVEC	6.2	6.5	4.6	
DeVry	4.9	5.6	6.4	
Others	17.6	19.5	14.0	
<u>Year-to-Date Sess:</u>		1867	2220	2438
<u>Elements Administ.</u>		6221	8666	8104
<u>VEC</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	
ARRL	55.3%	51.8%	52.5%	
W5YI	19.1	21.0	23.0	
CAVEC	4.0	3.8	3.7	
DeVry	4.1	5.0	5.9	
Others	17.5	18.4	14.9	
<u>Year-to-Date Elem.</u>		34060	43209	49680
<u>Applicants Tested</u>		3925	5301	4997
<u>VEC</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	
ARRL	55.6%	44.7%	52.1%	
W5YI	18.0	20.0	22.6	
CAVEC	4.1	3.8	3.3	
DeVry	4.6	5.6	6.4	
Others	14.7	25.9	15.6	
<u>Year-to-Date Tested</u>		23368	27348	29501
	<u>June</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Pass Rate - All		59.8%	60.0%	61.6%
Pass Rate - W5YI		61.1%	58.6%	55.2%
Applicants/Session		12.8	12.3	11.5
Appl./Session W5YI		8.5	8.5	7.3
Elements/Applicant		1.45	1.63	1.71
Sessions Per VEC		4.1	7.3	7.2
<u>Administrative Errors by VE's/VEC's</u>				
	<u>June</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Defect. Applications		0.3%	0.2%	1.32%
Late Filed Sessions		2.0%	0.5%	2.98%
Defective Reports		2.3%	3.0%	1.61%

### \*Note:

The FCC Considers ARRL, W5YI and DeVry to be 13 VEC's each since VEC's are appointed on a regional basis. The 13 regions are: Call Sign districts 1 through 0 plus Alaska (11), Caribbean (12) and Pacific Insular areas (13).

Source: Pers.Rad.Branch/FCC; Washington, D.C.



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• The following breakdown was issued by the FCC recently indicating **Amateur Operator Testing Activity by VEC** for the six months ending June 30, 1988. Although there are 18 VEC organizations, 76% of all examinations are conducted through the ARRL and W5YI-VEC programs.

VEC	Elements Admin./Rank	%Total Elements	%Cumulative
ARRL	25085 1	50.49%	50%
W5YI	12698 2	25.56%	76%
CVEC	2780 3	5.60%	82%
DeVry	2101 4	4.23%	86%
SunV	1378 5	2.77%	89%
WCARS	1035 6	2.08%	91%
GLAARG	1008 7	2.03%	93%
LARC	738 8	1.49%	94%
BEARS(*)	509 9	1.02%	95%
PHD	500 10	1.01%	96%
Sand	440 11	0.89%	97%
TEARC	403 12	0.81%	98%
Anch	339 13	0.68%	99%
Char	179 14	0.36%	99%
Kool	164 15	0.33%	99%
Milw	122 16	0.25%	100%
GEARS	109 17	0.22%	100%
Mount	39 18	0.08%	100%
Hono(*)	35 19	0.07%	100%
Jeff	18 20	0.04%	100%

Note: \* = No longer a VEC

[**VEC Organizations:** ARRL, American Radio Relay League; W5YI, W5YI Report VEC; CVEC, Central Alabama VEC; DeVry, DeVry Amateur Radio Society; Sunv, Sunnyvale-VEC Amateur Radio Club; WCARS, Western Carolina Amateur Radio Society; GLAARG, Greater Los Angeles Amateur Radio Group; LARC, Laurel Amateur Radio Club; BEARS, Boeing Employees Amateur Radio Society; PHD, PHD Amateur Radio Assoc., Inc.; Sand, San Diego Amateur Radio Club; TEARC, Triad Emergency Amateur Radio Club; Anch, Anchorage Amateur Radio Club; Char, Charlotte-VEC; Kool, Koolau Amateur Radio Club; Milw, Milwaukee Radio Amateurs Club; GEARS, Golden Empire Amateur Radio Society; Mount, Mountain Amateur Radio Club; Hono, Honolulu Amateur Radio Club; Jeff, Jefferson Amateur Radio Club.]

• The FCC has also advised all VEC's that it will not grant extensions of the [Part 97.23b] 365 day term of **Certificates of Successful Completion of Examination (CSCE)**. A CSCE is issued by VE teams when examinees pass amateur opera-

tor license tests, but not all of the requirements necessary for license issuance.

• The House of Delegates of the *American Medical Association* has passed **AMA Resolution 14** resolving to evaluate the risk to hospitals in the United States from **EMP - electromagnetic pulse** generated by nuclear explosions in the atmosphere ...and to recommend steps to develop responses to this threat. The AMA says that such an event would disable radio stations, telephone systems and power systems and thereby disrupt the function of hospitals for the duration of the outage. Electromagnetic warfare "...could, with one explosion, neutralize transistors and microchips in radios, telephones and computers, and possibly power generating stations, without any physical damage or death if the explosion were high enough," the AMA said. The resolution also notes that the civilian sector has shown little notice or initiative on the issue of protection from EMP and that "such protection is now technically feasible."

• The Pentagon is very much aware of EMP, however, and is actively taking steps to **protect the military against electronic warfare**. The U.S. Air Force has very quietly built a gigantic platform in a remote corner of New Mexico. It is probably just as well that most local residents are not aware of its use. "*The Trestle*," as it has come to be called, is used to park objects as large B-52 bombers so that they may be enveloped in electromagnetic pulses. The Navy has a floating EMP generator installed on the \$40 million barge (dubbed the *Empress II*) destined for duty in Chesapeake Bay. It will bath warships with a simulated EMP burst of 7 million volts for one-billionth of a second. The electromagnetic surge test site is about 35 miles south of Virginia Beach.

• More than 30 people attended a demonstration at the FCC last month of a prototype of **TV Answer's (\$150 cost) rf device** that enables viewers to "talk" to their TV sets. The firm has asked for 500-kHz between 216 and 220 MHz to further test the interactive technology. Ultimately the device could be built into television sets at a cost of \$25. TV Answer's system can be used to order pay-per-view programming, home shopping products, and to take public opinion polls or enhance instructional television.

• The QPC (*Question Pool Committee*) has finalized the outlines of the new Novice and Technician

per m pl cc s br " (A a " 1B); " and " (4A) " Extr Class ding. Order shipped the same day that order is received. W5YI; P.O. Box #565101; Dallas, Texas 75356-5101



question pools. A new topic, "**Communication through Satellites**" is being added to the Technician examination. The two new syllabi were issued on August 1. The next step is to revise the actual Novice and Technician questions using the outlines as a guide.

- The ARRL advises that their new **Element 4(B) Extra Class manual** (\$5.00 + \$2.50 shipping) will be available early next month. The current edition is good until October 31, 1988. The new questions take effect on November 1, 1988. If you want an advance look at the new Element 4(B) questions/multiple choices/answers, we have them available now. (\$4.00 postpaid)

- The ARRL Board of Directors voted last month to help settle the **repeater coordinator dispute** by offering its services to arrange for binding arbitration through the American Arbitration Association. The board affirmed its position that there can only be one recognized frequency coordinator for a given band and geographical area. Where an existing coordination mechanism is in significant dispute, no coordinator will be listed in the ARRL Repeater Directory until a settlement has been made. The primary disputes are in Kansas City and Southern California.

- The **new Tandy Radio Shack catalog** now promotes three amateur radio operator license preparation packages. The 68th edition (page 71) offers the **Novice Voice Class** License Preparation package for \$19.95 (complete with two code learning tapes), the **Technician** for \$3.95 and the new **General Class** package (including two tapes that take applicants from 5 to 13 wpm) for \$19.95. The new manuals were written by Gordon West, WB6NOA. In addition, there is a new \$6.95 **Packet Radio - Digital Communications with Amateur Radio** authored by Jim Grubbs, K9EI, of Springfield, Illinois.

- Tandy has introduced a **new electronic service called PC-Link** that allows users of its computers to access stock quotes/summaries, airline schedules, news, weather, home shopping and more! New version **DeskMate** software to access PC-Link will be included with all new IBM-compatible computers. **PC-Link** is a joint venture between **Quantum Computer Services** of McLean, Virginia, and Tandy. Cost will be \$9.95 a month for unlimited usage. Tandy also said it would begin distributing its computers through other than Radio Shack outlets.

- Who said the old timers are opposed to ham radio growth? An editorial in the Quarter Century Wireless Association's **QCWA Journal** suggests a no-code amateur radio operator license might be an answer to revitalizing the service and preventing commercial interests from taking over the electromagnetic spectrum space allocated to us. QCWA says common ground must be reached between the two primary (and opposite) schools of thought on a no-code license, that being "no code licensing will attract more young people" or "...will end amateur radio as we know it." QCWA says there is general agreement on one point. **"...Amateur radio must increase its numbers substantially, or face oblivion."** The editorial says that the average growth of 6,400 a year over the last 76 years must be increased. "...a growth of 20% per year might be attainable. The 80th anniversary of amateur licensing will occur in December, 1992. Let's set a goal of a million hams by '92." [QCWA Journal, Vol. 37, No. 2, p. 46]

- The public domain **TheNET** versus the copyrighted **NET/ROM** packet firmware controversy still rages! According to **Jay Maynard, K5ZC**, who circulated the story on packet; W6VIO, the ham station of the Jet Propulsion Radio Club, installed **TheNET** node but was forced to remove it from the air when **NET/ROM's** author, **Ron Raikes, WA8DED**, went to the director of JPL alleging piracy of his copyrighted work. One of JPL's patent attorneys ordered the club to remove **TheNET** chip immediately.

- MFJ has new innovative DX software for IBM compatible computers. The MFJ-1286 **Gray Line DX-Advantage** pictures a high resolution map of the world with a moving day/night divider (gray line) that indicates a path for DX propagation for any place in the world at any time and date from 1980 to 1999. Cost: \$29.95 toll-free from 1-800-647-1800. MFJ also has a new 2-dial **World Time Clock** that you can set to local and GMT time. In addition, the MFJ-109 has a sliding time indicator that you can move to any of 24 indicated international cities. (\$18.95)

- The FCC is cracking down on **theft of satellite programming**. Video signal theft - estimated at close to 50% - is a serious and growing problem. The agency has cited 19 firms that are thought to be marketing technology that defeats General Instrument's **VideoCipher II** technology. They have 30 days to respond. A federal judge in Miami ordered two satellite pirates to pay \$130,000 to GI. In

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AMATEUR RADIO QUESTION POOLS



Albany, N.Y. a federal grand jury has indicted 4 local men and six corporations on 86 counts of selling illegal descrambler boxes which allowed purchasers to receive all pay video services for free. They face 5 year prison terms and \$250,000 fines.

## ELECTRONIC DEVELOPMENTS TO WATCH...

- **Supermarket technology** of the future will not only allow products to be price scanned but will bag and debit the customer's account automatically as well. Price reduction coupons will no longer be handled manually. [Advertising Age]

- New **tapeless answering machines** from Sharp and Code-A-Phone utilize solid-state memories instead of audio cassette tapes. [High Technology Business]

- **Cable TV and electronic yellow pages** pose a serious threat to newspaper classified ad revenue. [Editor and Publisher]

- A Swiss company has designed the **Perfect Touch Command Center**, a \$1,000 automobile steering wheel, complete with a 20 button keypad to control cellular telephones and other audio gadgets. Car answering machine and dictation equipment is to be added to the system. An infrared transmitter sends the commands. [High Technology Business]

- French electronic firms have a four year head start on **flat TV screens** using field-emission vacuum technology. [Electronic Media]

- An investment group which includes some very big broadcast (NBC, United Artists) and cable companies are developing the **Interactive Game Network** to be accessed via telephone and FM hand-held units. [Multichannel News]

- Recent advances in **alpha-numeric paging technology** let people carry an electronic mailbox in their pocket. Companies are supplying customers with PcPage software allowing messages to be typed into personal computer. *Intelligent Quotations* sends stock quotes to pagers. Las Vegas, *BeeperPlus* has a sports result pager service. Remote sensors in factories, offices and homes automatically alert pager users of various operations. *PageWatch* is a New York alarm monitoring pager system. Pagers are being integrated with voice/electronic mail and FAX. Seiko plans an inexpensive wristwatch pager [High Technology Business]

- **Time Gauge** is a watch with a single hand and five minute increments! If the hand is exactly between 2 and 3, it is 2:30! Another (\$2,000) Swiss watch has a built in radio transmitter capable of sending emergency messages. [Insight]

- **Electronic Caddy** is a radio-controlled battery-operated three-wheeled golf cart that follows a golfer who has been fitted with a transmitter strapped to his back! [High Technology Business]

- **Micro-Dome Food Preserver** is a sort of **microwave pressure cooker** that electronically preserves food. [AdWeek]

- **MDphone** is a **doctor-to-heart-patient life saving device** that allows an electrocardiogram to be transmitted over the phone lines. Based on the reading, the doctor can dial in a desired amount of electric shock when is sent back over the phone lines to the heart patient's chest! [Insight]

- CD's, **compact recording discs**, now account for twice the sales of LP record albums! The CD market is worth nearly \$1.6 billion - up ten fold in just five years! [Marketing Week]

- **Accu-Call** is an **electronic tennis scoring system** that can pinpoint where a ball lands within one-hundredth of an inch. Sensors are embedded around around the court's edge. [Business Week]

- K mart Corp., the world's second largest retailer plans to use the **Prodigy interactive personal computer service** as a sales and marketing tool. They join J.C. Penny, Sears, Neiman Marcus and Spiegel. The shopping service, now being tested, is to be expanded to 20 major markets. Spiegel also testing selling fall fashions via a "Video Fashion Journal" videocassette. [Marketing Week]

- A **Gallup telephone survey** asked more than 1,000 adults if they had any interest in shopping at home using a computer at a low monthly fee. 71% expressed **no interest!** [Target Marketing]

- **The Playboy Channel** cable service will be repackaged and remarketed as **Night Life** next year. The Playboy Channel once had one million subscribers, now is down to about 400,000 due to "access problems." Cable systems are refusing to carry the adult service on their lineup. A study revealed that the name "Playboy" is a detriment to the growth of the channel. [Multichannel News]



• The FCC has prepared a draft copy of a Bulletin entitled "**How to Administer an Examination for a Novice Class Operator License**" and has circulated it to all VEC's for their comments. The six page instructions details VE requirements, Novice operator license requirements, Form 610 preparation, examination credit, designing and administering the telegraphy (Element 1A) and written (Element 2) examinations and completion of the Administering VE's Report. It is permissible to obtain the telegraphy examinations from a supplier. The FCC has suggested that the stipulated characters "may" be used rather than "must" be used. These characters are all alphabet letters and numerals 1-0, plus punctuation, [question mark, comma, slant bar] and operating prosigns, [AR, SK and BT.] This will help VE's in constructing the 5 wpm code test since it is a burden to prepare a 5 minute examination containing approximately 125 characters using 43 different characters.

• **Novice Examination Kits** are available to qualified VE's at \$4.95 each from W5YI. The kit contains the entire VEC-approved question pool, multiple choices, correct answers, a 5-wpm properly constructed code test cassette tape, different versions of the Novice written examinations [in the event VE's do not wish to design their own tests] plus FCC Form 610 applications. We also have the *Element 2* [Novice], *Element 3(A)* [Technician] and *Element 3(B)* [General Class] Q&A pools available at \$2.00 each postpaid. These test manuals may be purchased by anyone, ...VE's or examinees.

## SATELLITE NEWS FROM AMSAT!

The number of OSCAR-13 users is increasing dramatically and they are apparently satisfied with the performance of the amateur satellite. The condition of the bird is *excellent* except for a thermal related glitch in the RUDAK packet digipeater system. The system periodically "hangs up" and it is thought that the PROM is temperature sensitive. AMSAT-DL is now evaluating ways of warming the RUDAK module.

Due to better satellite angles, Mode L (1269 MHz uplink/435 MHz downlink) operation improved this past week and users have been showing up in droves on the new mode. Equipment dealers report an unprecedented run on 24-cm equipment! AMSAT OSCAR 13 continues under engineering "fine tuning" jurisdiction and has not yet been officially released for full operations. **Vern Riportella**,

**WA2LQQ**, advises that AO-13 "*First Day Club*" logs, certificates and QSL cards are being processed and "should be mailed to all qualifiers by mid-September."

Over 160 persons from 19 countries attended the **3rd AMSAT-UK/UoSAT Space Colloquium** held at the University of Surrey (England) July 29-31. International speakers presented 20 papers on such topics as AMSAT geostationary Phase 4 spacecraft, amateur radio using high altitude balloons, the Chinese space program, and PACSAT packet radio satellites. **Leonid Labutin (UA3CR)**, who headed up the Soviet SKITREK expedition and a prime mover in the Soviet Radio Sputnik (RS) program, presented a paper on the project and spoke on future Soviet satellite plans.

In its weekly packet bulletin, AMSAT, dismayed at the loss of 220-222 MHz, "urged support of its landmark *Phase 4 Geosynchronous Satellite Program* to deflect further frequency grabs especially at 1.3 GHz and up."

## AMATEUR MICROSATS TO BE LAUNCHED!

A consortium of Amateur Radio Groups have teamed up with the *Center for Aerospace Technology* (CAST) at Weber State College (Utah) to construct and launch a new class of sophisticated "mission specific" ultra-compact "microsatellites." Three AMSAT organizations (AMSAT-NA/North America, AMSAT-LU/Argentina and Brazil's BRAMSAT) will be aided by TAPR, Tucson Amateur Packet Radio and the ARRL in the endeavor.

The four satellites, now under construction in Boulder, Colorado, are *only 9 inches square and weigh only 22 pounds each*. The two AMSAT-NA and AMSAT-LU payloads are PACSATS - store and forward packet radio communications satellites that can blanket the earth up to eight times a day. According to Brazil AMSAT president **Dr. Junior De-Castro, PY2BJO**, BRAMSAT's *Project DOVE* (Digital Orbiting Voice Encoder) aims to "Be the first satellite specifically designed to transmit voice synthesized messages that implicitly promote peace among nations." DOVE will "speak" to anyone who has a simple VHF scanner/radio. "It will not become a propaganda machine for anyone," DeCastro said. The CAST satellite is an earth-looking, low resolution camera. AMSAT-NA has already contracted to launch the four *microsats* aboard the V-34 Arianespace mission scheduled for June 1989.